

Amendments to the Specification:

Please replace the Title with the following amended Title:

METHOD OF MAKING A MARKING GRID FOR RADIOGRAPHIC IMAGING, AND
METHOD OF MAKING SUCH A GRID

Please replace the paragraph starting on page 1, line 4, with the following amended paragraph:

This is a Divisional of copending U.S. application Ser. No. 10/074,943, filed October 29, 2001, now U.S. Patent No. 6,714,628 entitled "Marking Grid for Radiographic Imaging, and Method of Making Such a Grid", the disclosure of which is hereby incorporated by reference in its entirety as part of the present disclosure.

Please replace the paragraph starting on page 2, line 12, with the following amended paragraph:

Accordingly, it is an object of the present invention to overcome one or more of the drawbacks or disadvantages of the prior art and to provide a marking grid for radiographic imaging that ~~allowed~~allows a radiologist to place markings on the patient's body or insert biopsy needles in the optimum desired location selected by the radiologist, and to provide an improved method of making a marking grid.

Please replace the paragraph starting on page 4, line 15, with the following amended paragraph:

The present invention is directed to a novel marking grid that provides reference marks on radiographic images of a patient's body, while allowing biopsy needles to be inserted or markings to be made on the patient's skin without removing the marking grid, and to a method of making a marking grid. Preferred embodiments of the invention are described below in conjunction with the drawings provided herein. The preferred embodiments disclosed herein are to be considered exemplary of the principles of the present invention to the embodiments described or illustrated. Various modifications will be apparent to those skilled in the art based

on the teachings herein without departing from the scope or spirit of the invention disclosed herein.

Please replace the paragraph starting on page 5, line 22, with the following amended paragraph:

It is preferred that the elastic material be capable of returning substantially to its original dimensions after imaging is complete. It is not required that the elastic material return to its original dimensions after use, however, as the marking grids are typically used only ~~ones~~once, and a material that is permanently deformed by stretching may be used. In a preferred embodiment, after imaging is complete and the skin is allowed to relax, the elastic material returns to dimensions that are no more than about 105% of its original dimensions. The invention is not limited in this regard, however, and any appropriate elastic material may be used for the substrate.

Please replace the paragraph starting on page 6, line 12, with the following amended paragraph:

As shown in Fig. 1, the marking grid is provided on a backing 12. The backing 12 may be made from paper coated with wax or plastic, or ~~form~~from any other appropriate material that will allow easy removal of the marking grid from the backing without disrupting the pressure sensitive adhesive from the substrate. The backing has holes 24 on at least one side, and typically on two opposing sides, that can be used to feed the backing and substrate through manufacturing equipment or can be ~~sued~~used in packaging to dispense the marking grids. The holes 24 are preferably spaced at regular intervals.

Please replace the paragraph starting on page 6, line 19, with the following amended paragraph:

In a preferred embodiment, the backing 12 has a cut out portion 28 underlying a portion of the substrate 10. The cut out portion may be generally round, oval or crescent shaped, and can be die cut from the backing. The invention is not limited in this regard, however, and any desired shape may be used. The cut out portion 28 conforms generally with the shape of the corner of the marking grid. In use, the cut out portion 28 remains adhered to the underside of the

corner of the marking grid when the marking grid is removed from the backing to form a gripping tab 32. The gripping tab enables the user to remove the marking grids from the backing without requiring the use of a fingernail or sharp instrument to peel the marking grid off of the backing. Also, the gripping tab allows the user to properly position the marking grid on the patient, as the gripping tab does not adhere to the user's finger. The gripping tab also allows for convenient ~~remove~~removal of the marking grid from the patient after imaging because the gripping tab is not adhered to the patient's body.

Please replace the paragraph starting on page 7, line 8, with the following amended paragraph:

Parallel strips 18 made of a material that is at least partially radiopaque are fixed to the substrate 10. The parallel strips 18 can be comprised of any material that is sufficiently radiopaque to produce visible marks on the radiographic image. For example, the strips may be comprised of a metal wire; of beads or strands of a homogeneous non-metallic material, such as polyvinyl chloride, or of a metal-compounded plastic material, such as nylon filled with tungsten carbide. Alternatively, the parallel strips may be comprised of fine particles of materials which have a density greater than 1.0 g/cm^3 . These particles could be metallic materials, such as, for example, tungsten or bismuth, or the particles could be non-metallic materials, such as, for example, barium sulfate or calcium carbonate. The particles may be dispersed in a carrier material, such as, for example, a hot met or a glue, that is applied the substrate. The particles are dispersed uniformly in the carrier material in a specific concentration to achieve the desired radiopacity. As shown in Fig. 1, the parallel strips 18 are preferably fixed to the front of the substrate 10. The parallel strips may be fixed to the substrate using any appropriate method known to those skilled in the art. In one embodiment of the invention, the parallel strips are fixed to the substrate using glue.

Please replace the paragraph starting on page 9, line 11, with the following amended paragraph:

The substrate is cut to the desired shape, with apertures cut between the parallel strips. Cutting is typically performed using a die cutter that is set up to cut the substrate without cutting the releasable backing. The die cutter may be used to cut the portions of the releasable backing

~~used~~ for the gripping tab without cutting the substrate. Excess substrate material may be removed from the releasable backing and discarded. The holes in the releasable backing are used to register the precise location of the substrate in the cutting equipment to ensure that the substrate is cut in the correct locations. This allows reduction in the amount of substrate material that may be discarded and allows the cutting process to be performed rapidly, thereby reducing production costs.

Please replace the paragraph starting on page 9, line 20, with the following amended paragraph:

Turning to Fig. 3, an exemplary apparatus for manufacturing the marking grid in accordance with the present invention is indicated generally by the reference numeral 44. The apparatus 44 includes a base 46 defining a work support surface 48. Drive means, such as sprockets 50, are rotatably mounted on the base 46 adjacent to the work support surface 48 and include a plurality of drive members, such as sprocket pins 52. As can be seen, the sprocket pins 52 are received within the ~~apertures~~holes 24 of the releasable backing to engage and, in turn, drive the backing through the apparatus. A motor 54 is drivingly connected to the ~~drive means~~sprockets 50, and a control unit 56 is electrically coupled to the motor to control the movement of the marking grid through the apparatus. A carriage 58 is drivingly mounted on a pair of ways or like supports 60 extending over the work support surface 48, and vertical supports 62 support the ways over the work support surface. A tool head 64 is mounted on the carriage and, as indicated by the arrows in Fig. 3, the tool head is movable toward and away from, or into and out of engagement with, the marking grid located on the work support surface 48. As also indicated by the arrows in Fig. 3, the carriage 58 is driven laterally along the ways 60 to position the carriage, and thus the tool head 64 relative to the work support surface. As indicated by the broken lines in Fig. 3, the carriage 58 and tool head 64 are electrically connected to the control unit 56 to drivingly control the position of the carriage and tool head relative to the work support surface and the marking grid located thereon.

Please replace the paragraph starting on page 11, line 1, with the following amended paragraph:

A significant advantage of the marking grid of the present invention is that the ~~apertures~~holes 24 formed in the marginal portions of the releasable backing 12 allow precise registration between the tool head and both the backing and the substrate attached to the backing. Thus, the ~~apertures~~holes 24 allow the radiopaque strips 18 to be rapidly and precisely applied to the substrate, and further, allow the elongated apertures 26 and 27 to be rapidly and precisely formed in the substrate.

Please replace the paragraph starting on page 11, line 14, with the following amended paragraph:

As may be further recognized by those of ordinary skill in the art based on the teachings herein, numerous other changes and modifications may be made to the above-described and other embodiments ~~for~~ the present invention without departing from its scope and spirit as defined in the appended claims. For example, the marking grid described herein may include any of numerous types of radiopaque or partially radiopaque materials, the holes of the releasable backing may take any of numerous different shapes or configurations, or may be spaced relative to each other in any of numerous different patterns corresponding to or otherwise dictated by the patterns of the feed pins or like drive members of the manufacturing equipment. Accordingly, this detailed description of preferred embodiments is to be taken in an illustrative as opposed to a limiting sense.